

AMENDMENTS TO THE CLAIMS

Listing of Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Claims 1 – 11 (Canceled)

12. (Currently Amended) A management system for managing distributed resources~~(11-16; 61-66)~~, the system comprising:

~~a digital computer managed system providing a management client (41) coupled to a controller (44) which communicates with a correlation server (48) and with an event server in communication with a management client;~~

~~an event server (51) having managed resources 61-66 to be managed;~~

~~a correlation server coupled to the controller and to the event server, said correlation server (48) comprising a web service container (71) with correlation services implemented as stateful web correlation services (74, 75, 76) which communicate with each other and with a workflow engine, (88) that can the workflow engine configured to execute management workflows in order to actively control the managed resources (11-16; 61-66) which have been registered with said stateful web correlation services (74, 75, 76);~~

~~said stateful web correlation services (74, 75, 76) including providing multiple autonomic stateful web correlation services, each autonomic stateful web correlation service configured for monitoring and controlling part of said managed system that manage a different functional parts of the managed system in cooperation with the workflow engine, the monitoring and controlling including (88) to querying the state of the managed resources (61-66) which have been registered with said stateful web correlation services (74, 75, 76) and to communicating with the event server (51) while employing a correlation engine (174, 175) and a set of rules (184, 185, 196) that defining how to manage underlying resources (61-66) shall be managed in a correlation model, wherein said controller (44) communicates with the stateful web correlation services (74-76) to instantiate said stateful web correlation services~~

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~~(74, 75, 76)~~ according to said correlation model, and wherein a managed resource must be registered with a stateful web correlation service in order for the stateful web correlation service to have access to a state of the managed resource.

13. (Currently Amended) The management system according to claim 12, ~~wherein characterized in that~~ the stateful web correlation services ~~(74-76)~~ directly ~~(92)~~ communicate with the managed resources ~~(61-66)~~.

14. (Currently Amended) The management system according to claim 12, ~~characterized in that~~ wherein rules for filtering low-level events issued by managed resources ~~(61-66)~~ are deployed in an event service application ~~(50)~~ that is used to filter high-level events from low-level events.

15. (Currently Amended) The management system according to claim 14, ~~wherein characterized in that~~ the controller ~~(44)~~ communicates with the event service application ~~(50)~~.

16. (Previously Presented) The management system according to claim 12, ~~wherein characterized in that~~ the stateful web correlation services are modeled as stateful web services to instantiate said correlation services according to a user-defined correlation model, whereby each of said stateful web correlation services can introspect each other and subscribe to events issued by each other for managing their respective functional part of said managed system and, wherein each single correlation service manages part of the overall system; and, in said management of a functional part of the overall system, a single correlation service checks whether it contains rules that react to high-level events issued by subordinate correlation services, and uses web service introspection to see which events are issued by another correlation service.

17. (Currently Amended) A computer implemented method for managing distributed resources in a computer system, the method comprising ~~comprising steps executed by a digital computer managed system having an internal control system implementing:~~

a) providing a user defined correlation model comprising the definitions of several autonomic stateful web correlation services ~~(74, 75, 76)~~ for different functional parts of the

managed system to define how to manage distributed resources in the managed system that have been registered with the stateful web correlation services; ~~providing multiple autonomous correlation services for monitoring and controlling part of said distributed system; and~~

b) wherein a controller of said internal control system instantiating, by a controller, ~~es~~ the stateful web correlation services; and

~~-(74-76) to executing, responsive to the instantiating, the stateful web correlation services~~ run in accordance with the definitions ~~in~~ of the user defined correlation model, the executing of each stateful web correlation service comprising monitoring and controlling a functional part of the computer system in cooperation with a workflow engine, the monitoring and controlling comprising querying states of the managed resources that have been registered with the stateful web correlation services, wherein a managed resource must be registered with a stateful web correlation service in order for the stateful web correlation service to have access to a state of the managed resource, and c) wherein said user-defined correlation model defines how underlying resources (61-66) which have been registered with said stateful web correlation services (74, 75, 76) shall be managed as said controller (44) communicates with the stateful web correlation services (74-76) to instantiate said stateful web correlation services (74, 75, 76) according to said correlation mode

18. (Currently Amended) The method according to claim 17, ~~wherein~~ characterized in that handles to all of the resources managed by a single one of said stateful web correlation services (74-76) are stored within that single stateful web correlation service.

19. (Currently Amended) The method according to claim 17, ~~wherein the definitions in the user defined correlation model further include~~ characterized in that definitions of high level events are defined on which a specific single one of said stateful web correlation services (74-76) shall react; and ~~in that the method further comprises creating a subscription, by the respective single one of said stateful web correlation services, (74-76) creates subscriptions with an event service (50) in order to be notified when such events are detected.~~

20. (Currently Amended) The method according to claim 17, ~~wherein~~ characterized in that the user defined correlation model further comprises ~~a~~ provides set of rules that describe

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how the managed resources shall be managed; and, said rules being triggered during the executing responsive to by detected high-level events being detected, the rules initiating and include queries on resource states and triggering the execution of management workflows, wherein, and said correlation model defines a set of high-level events which can be issued by the ~~c~~Correlation ~~s~~Service as a result of said rules, and if detected problems cannot be resolved by a stateful web correlation service, then a higher-level stateful web correlation services can subscribe for these events to create a hierarchical network as said higher-level stateful web correlation services use web service introspection to see which events are issued by another one of said stateful web correlation services ~~(75, 76).~~

21. (Currently Amended) The method according to claim 17, wherein the monitoring and controlling further comprises characterized in that the stateful web correlation services (74-76) triggering the execution of workflows by the workflow engine in order to actively manage the managed# resources (64-66).

22. (Currently Amended) A computer program product for managing distributed resources in a computer system, the computer program product comprising:

a tangible storage medium readable by a processing circuit and storing instructions for execution by the processing circuit for performing a method comprising: stored in the internal memory of a digital computer, in combination with said digital computer, said combination comprising: a digital computer managed system having an internal control system to provide for stateful web services and executable code stored in said internal memory containing parts of software code to provide

a) providing a user defined correlation model comprising the definitions of several autonomic stateful web correlation services (74, 75, 76) for different functional parts of the managed system to define how to manage distributed resources in the managed system that have been registered with the stateful web correlation services;

providing
multiple autonomic correlation services for monitoring and controlling part of said distributed

system; and

b) ~~wherein a controller of said internal control system instantiating, by a controller, es the~~
stateful web correlation services; and

~~(74-76) to~~ executing, responsive to the instantiating, the stateful web correlation services run
in accordance with the definitions ~~in~~ of the user defined correlation model, the executing of each
stateful web correlation service comprising monitoring and controlling a functional part of the
computer system in cooperation with a workflow engine, the monitoring and controlling
comprising querying states of the managed resources that have been registered with the stateful
web correlation services, wherein a managed resource must be registered with a stateful web
correlation service in order for the stateful web correlation service to have access to a state of the
managed resource; and

e) ~~wherein said user defined correlation model defines how underlying resources (61-66)~~
~~which have been registered with said stateful web correlation services (74, 75, 76) shall be~~
~~managed as said controller (44) communicates with the stateful web correlation services (74-76)~~
~~to instantiate said stateful web correlation services (74, 75, 76) according to said correlation~~
~~model.~~

23. (Currently Amended) The computer program product of claim 22,
~~wherein characterized in that~~ handles to all of the resources managed by a single one of said
stateful web correlation services ~~(74-76)~~ are stored within that single stateful web correlation
service.

24. (Currently Amended) The computer program product of claim 22, ~~wherein~~
~~definitions in the user defined correlation model further include definitions of~~ characterized in
~~that high level events are defined on which a specific single one of said stateful web correlation~~
~~services (74-76) shall react, and in that the method further comprises creating a subscription,~~
by the respective single one of said stateful web correlation services (74-76) creates
subscriptions with an event service (50) in order to be notified when such events are detected.

25. (Currently Amended) The computer program product of claim 22,
~~wherein characterized in that said the user defined correlation model further comprises~~ defines
~~how with a set of rules that describe how the managed resources shall be managed; said rules~~

being triggered ~~during the executing responsive to~~ by detected high-level events being detected,
the rules initiating, and include queries on resource states and trigger the execution of
management workflows, wherein; and said correlation model defines a set of high-level events
which can be issued by the ~~c~~Correlation ~~s~~Service as a result of said rules; and if detected
problems cannot be resolved by a stateful web correlation service, then a higher-level stateful
web correlation services can subscribe for these events to create a hierarchical network as said
higher-level stateful web correlation services use web service introspection to see which events
are issued by another one of said stateful web correlation services ~~(75, 76).~~

26. (Currently Amended) The computer program product of claim 22, wherein the
monitoring and controlling further comprises ~~characterized in that the stateful web~~
~~correlation service (74-76) triggering the execution of workflows by the workflow engine in~~
order to actively manage their managed resources ~~(64-66).~~